

REMARKS / ARGUMENTS

Claims 1-22 are pending in the application. All claims stand rejected. Claims 1 and 13 are amended in this response.

All claims were rejected under 35 USC §102(b) or §103(a) over U.S. Patent 6,107,480 to Funken and U.S. Patent 5,756,726 to Hemmi. Applicants respectfully traverse this rejection. The Hemmi patent fails as an anticipatory or obviousness reference on several grounds.

- 1) Hemmi does not disclose or suggest polymers to which is bound a plurality of photosensitizer groups.
- 2) Hemmi does not disclose or suggest polymers to which is bound a plurality of cationic groups $^+QR_3$.
- 3) The only mention of a polymer in the entire disclosure of Hemmi is an embodiment where the texaphyrin can have as a substituent a chain of 1-30 amino acids. The optional amino acid chain serves as a catalytic group. Moreover the catalytic function of said chain is described (column 9, lines 13-18) as being for uses other than producing singlet oxygen.
- 4) The present polymers are cross-linked polymers designed specifically to be water insoluble. In contrast, the texaphyrin compounds of Hemmi are, in the main, soluble monomeric compounds. The only context in which the texaphyrin compounds could arguably involve a polymer is as a polypeptide conjugate (column 9, lines 23-32). These are neither cross-linked nor water insoluble.
- 5) Yet other bases for distinguishing many of the dependent claims

on both novelty and obviousness grounds.

For at least these reasons reconsideration of the rejection over U.S. Patent 5,756,726 is thereby requested.

The Funken patent also fails as an anticipatory or obviousness reference on several grounds.

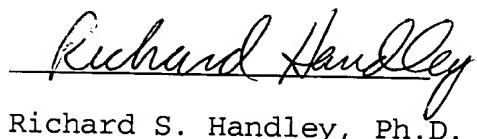
- 1) Funken does not disclose or suggest polymers to which is bound a plurality of cationic groups $^+QR_3$ wherein R is "independently a straight, branched or cyclic alkyl group of 1 to about 20 carbons or an aralkyl group and the average total number of carbon atoms in the group QR_3 is at least four" as recited in present claim 1. The only example of a cationic group appearing anywhere in the sensitizers of the reference is the optional presence of a pyridinium group as a substituent on the porphyrin ring (see e.g. claim 1). Taking for the sake of argument that such a pyridinium represents the equivalent of Applicants' claimed $^+QR_3$ group as may be inferred from the Examiner's rejection, it is seen that the reference can not anticipate the present claims. An N-substituted pyridinium group simply does not equate with the stated definition of the $^+QR_3$ group. The unexpectedly superior properties conferred by the particularly claimed $^+QR_3$ groups is demonstrated in Example 6 and Table 1 of the specification. Funken is silent with regard to this effect and provides no reasonable basis for suggesting or predicting it.
- 2) Funken does not disclose or suggest polymers to which is bound a plurality of cationic groups $^+QR_3$ wherein Q is phosphorus.

- 3) The reference does not disclose or suggest crosslinked polymers.
- 4) Regarding dependent claim 15, the reference also does not disclose or suggest polymers having a polystyrene backbone.
- 5) Regarding dependent claims 10, 14, 15, and 20 Funken does not disclose or suggest polymers to which a sensitizer is ionically bound.
- 6) Yet other bases for distinguishing many of the dependent claims on both novelty and obviousness grounds.

For at least these reasons reconsideration of the rejection over U.S. Patent 6,107,480 is thereby requested.

Claims 1-22 were rejected under 35 USC §112, 2nd ¶ as being indefinite with respect to the language specifying the Markush group in claim 1. The claim has been amended as suggested by the Examiner. Claim 13 has also been amended in response to an objection by the Examiner. In the interest of advancing prosecution, language drawn from the specification at page 14, lines 17-19 describing a preferred particle size has been added to the claim.

As all grounds for rejection have been traversed Applicants believe the claims to be allowable. Notice of Allowance is respectfully requested.


Richard Handley

Richard S. Handley, Ph.D.

Registration No. 38,484